Green Energy Partners/Stonewall (GEP/S) Hybrid Energy Park

ZMAP 2009-0005/SPEX 2009-0009/CMPT 2009-0001

Planning Commission Public Hearing
December 17, 2009

GEP/S Hybrid Energy Park Request

- ZMAP

  Rezone 90.5 acres from TR-10 & JLMA-20 to MR-HI

- SPEX

  Develop electricity generating & transmission facility

- CMPT

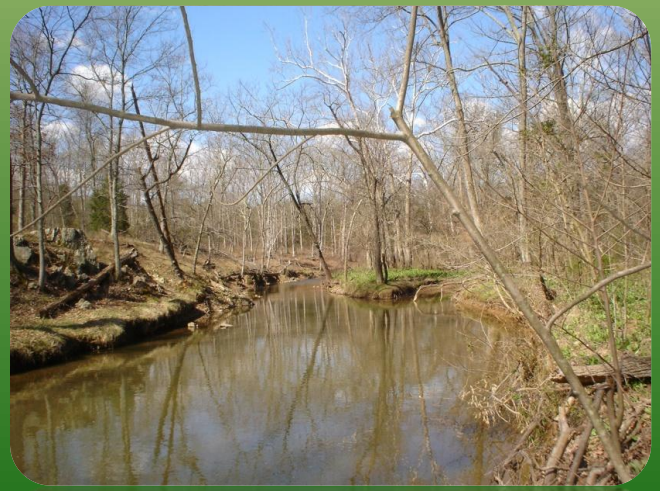
  Location, character & extent in accord with Comprehensive Plan

Example of proposed facility

GEP/S Hybrid Energy Park - Vicinity

GEP/S Hybrid Energy Park
Existing Conditions

- ❑Heavily treed
- ❑Wetlands & streams
- ❑Habitat
- ❑Very steep & moderately steep slopes
- ❑ Diabase & hydric soils



Sycolin Creek

GEP/S Hybrid Energy Park
Existing Conditions - Overlay Districts

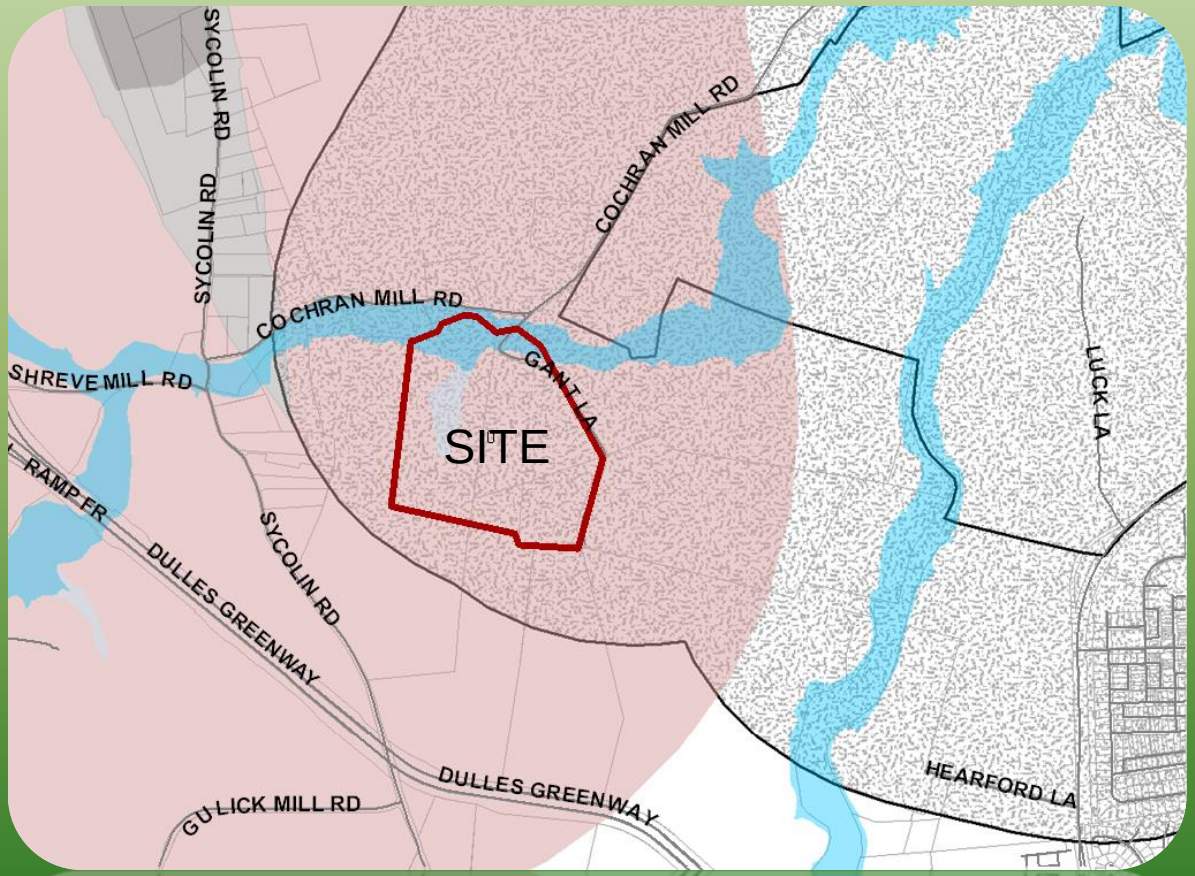
QN

AI (1 mile of Ldn 60)

FOD:

major

minor



GEP/S Hybrid Energy Park
Existing Conditions

Underground gas lines

Overhead electrical lines

GEP/S Hybrid Energy Park

Existing Conditions - Archaeological & Historic Resources

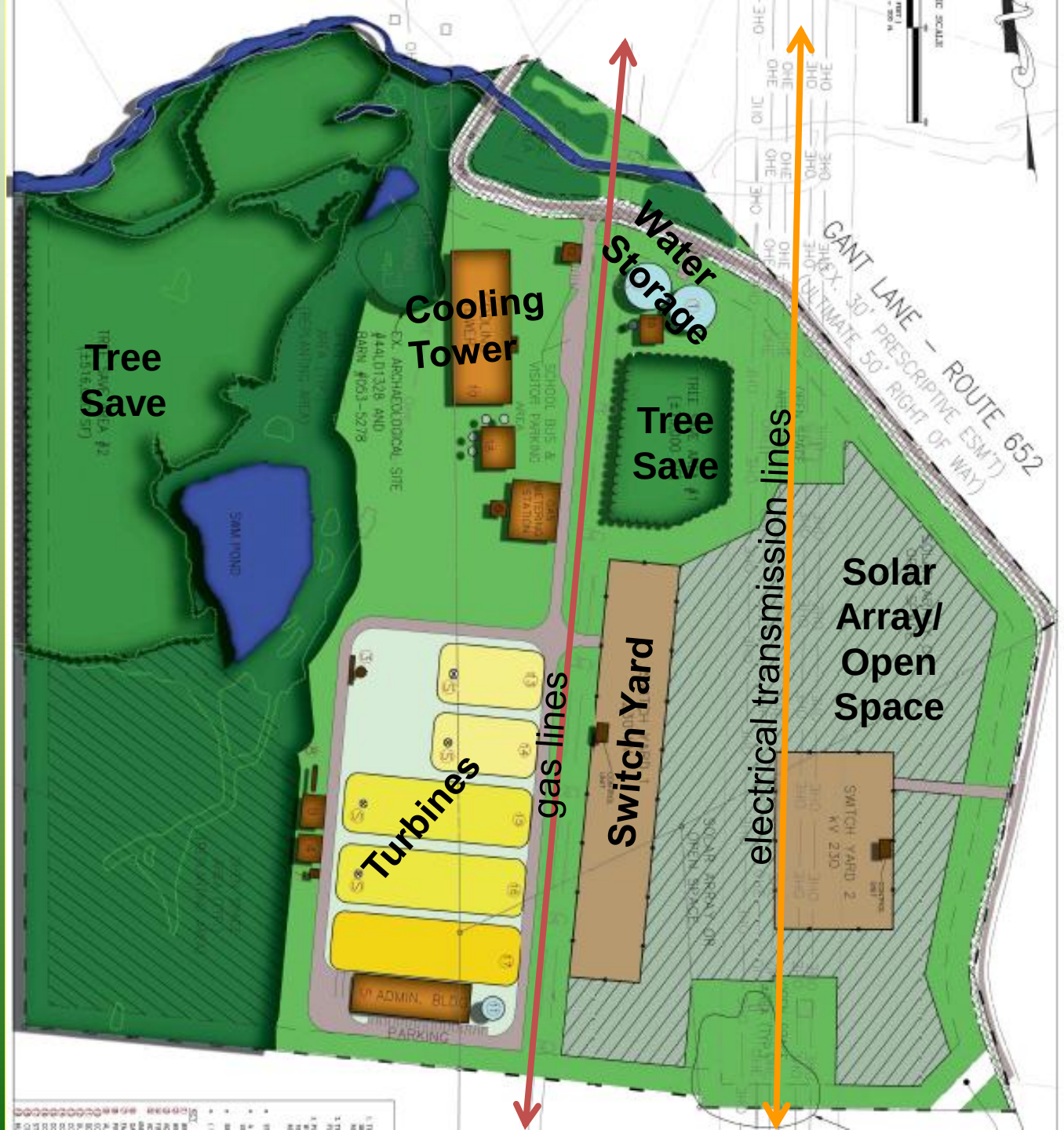
House ruins & barn c. 1925-1950

African American settlement - Lower Sycolin Community

- ❑Proffered to preserve
- ❑Staff recommends producing an historical narrative

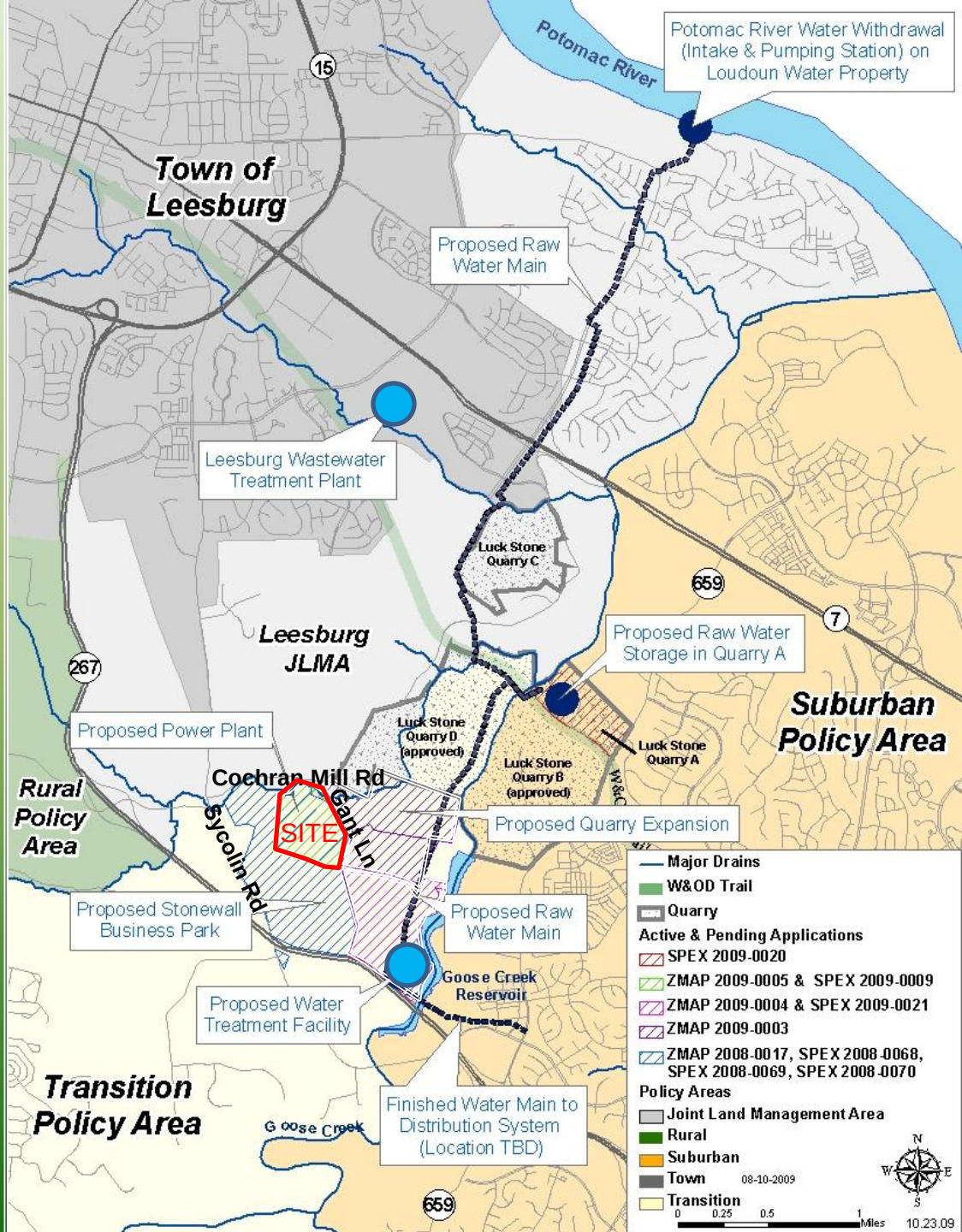
Proposal

- Facility that generates & transmits electricity - 981 MW
- Use natural gas & steam to generate electricity
- Transmit electricity to grid



Hybrid Energy Park Water Source

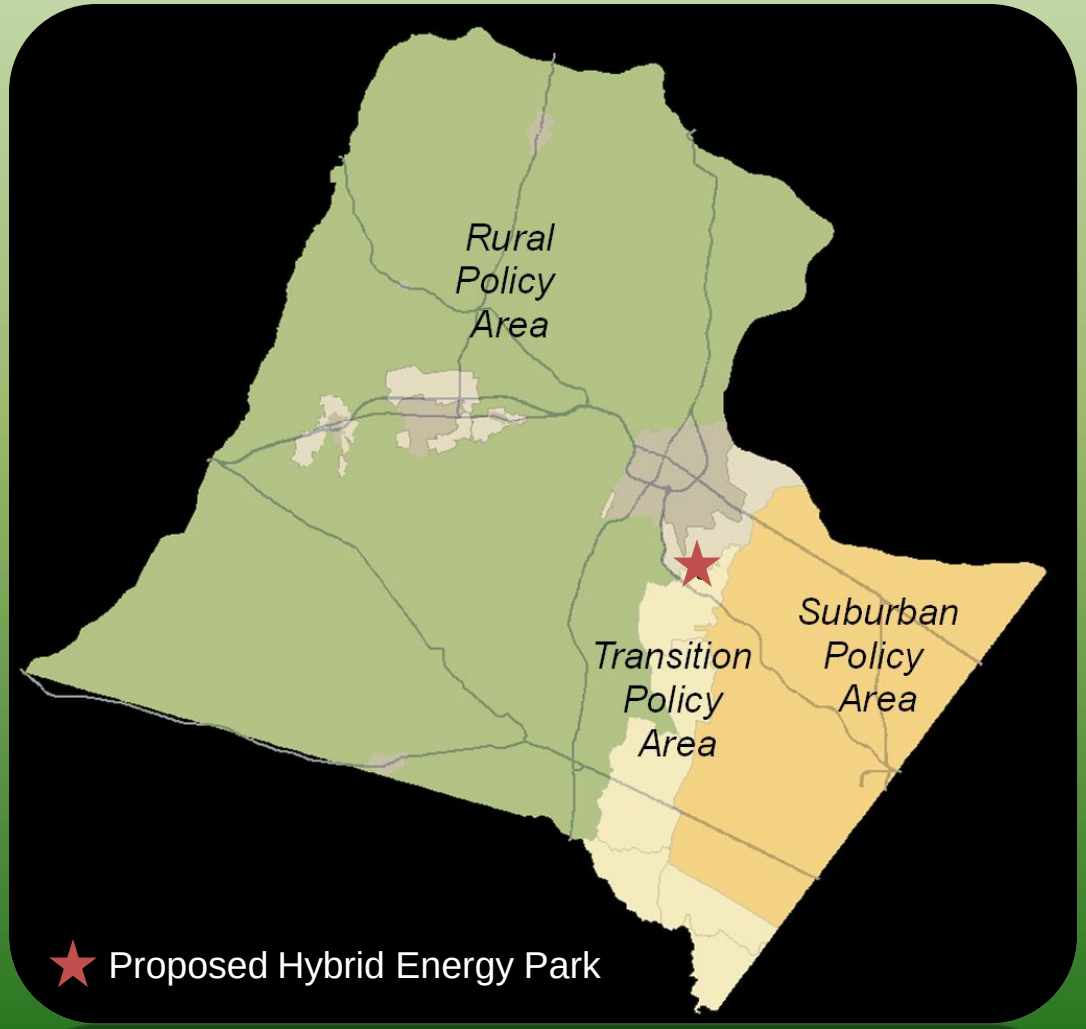
- Use 5 million gallons water/day
- Effluent from Leesburg Wastewater Treatment Plant
- Water from Loudoun Water



GEP/S Hybrid Energy Park
Zoning Issue

GEP/S Hybrid Energy Park
Land Use - Energy Policies

- Apply Countywide
- If clean burning & environmentally sound, can be located where impact on surrounding land uses & environment is compatible
- Must complement community land use strategies

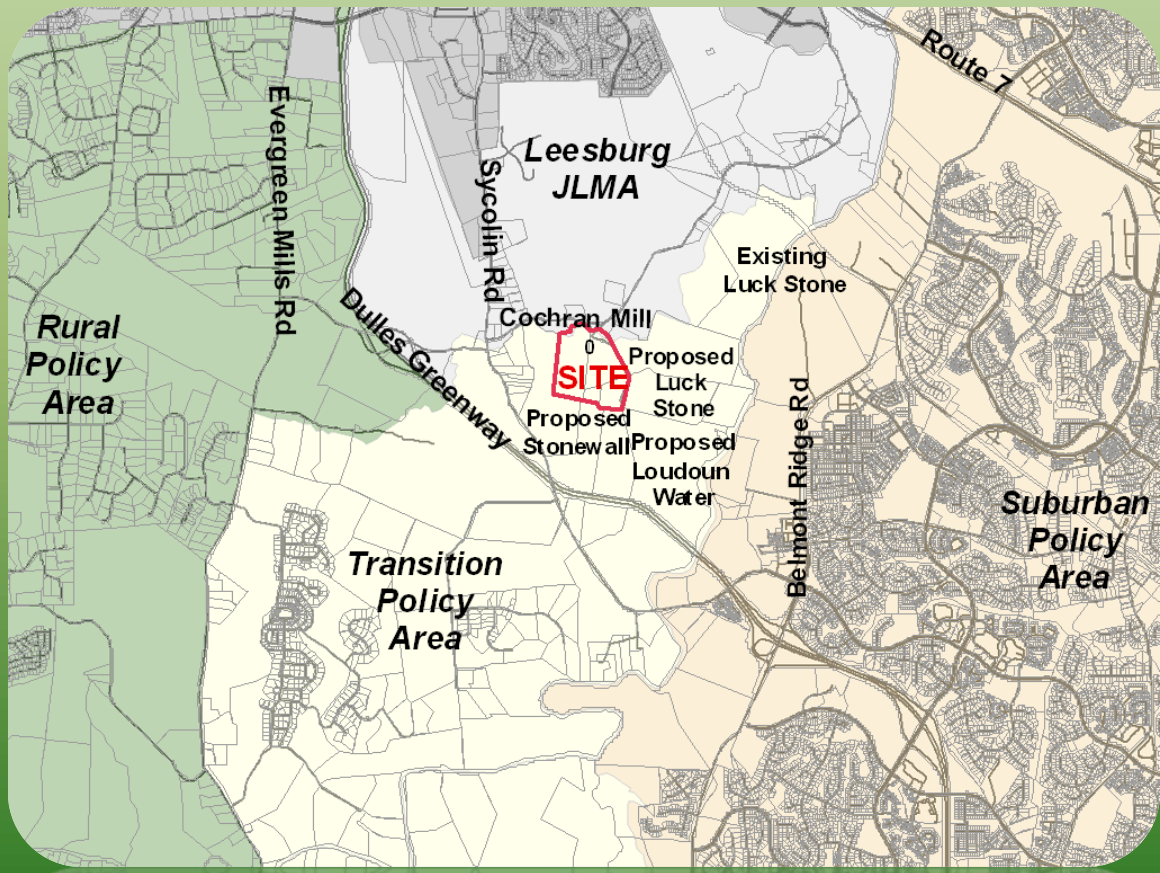


GEP/S Hybrid Energy Park

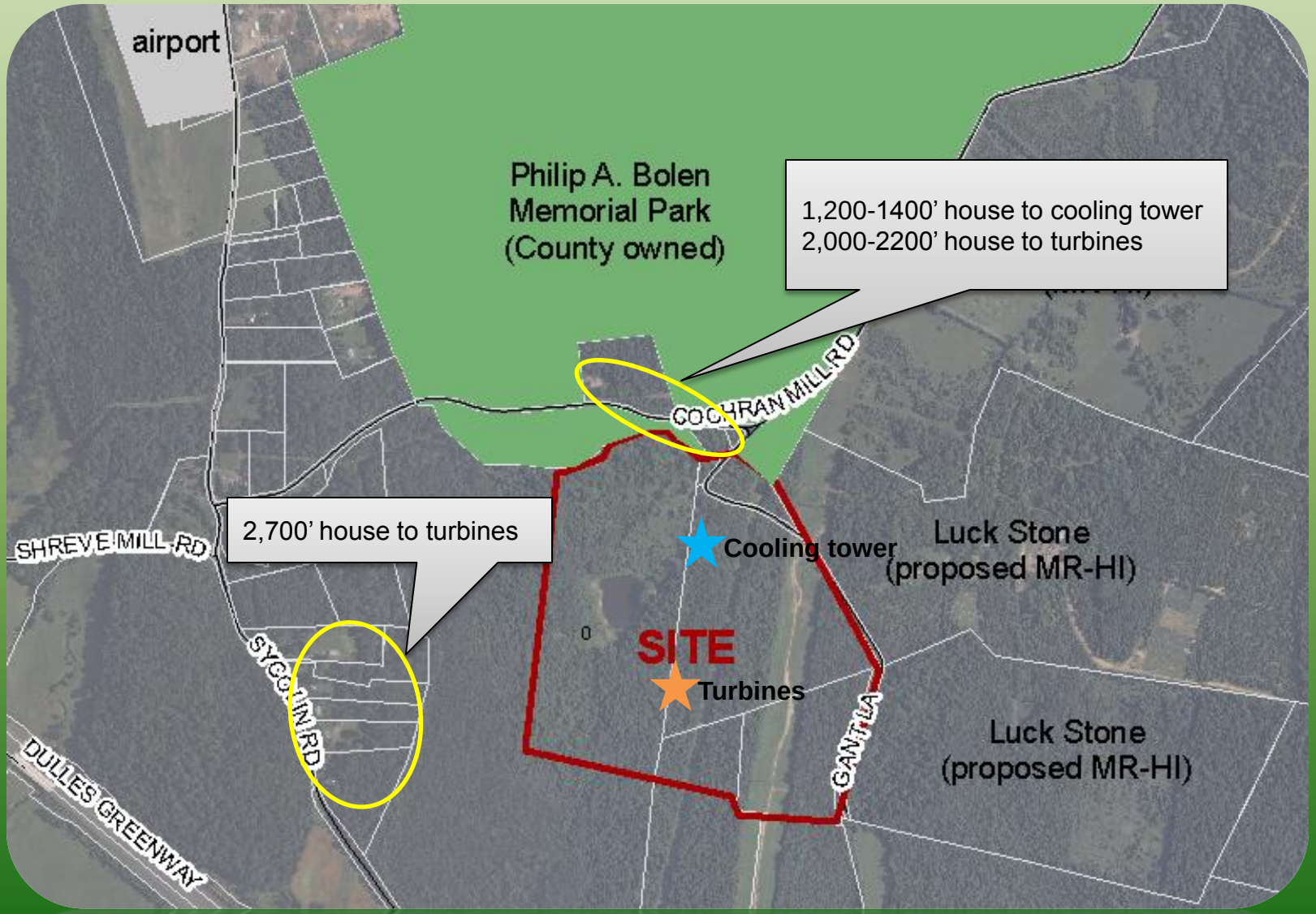
Land Use Policy - Transition Policy Area

Lower Sycolin Subarea

- Low density & rural
- 70% open space as predominant visual element
- Provide visual & spatial transition between Rural & Suburban Policy Areas
- Protect drinking water of Goose Creek Reservoir



GEP/S Hybrid Energy Park
Compatibility with Park & Residential



GEP/S Hybrid Energy Park

Impact

- Air Quality
  - Nitrogen oxides
  - Carbon monoxide
  - Sulfur dioxide

  "insignificant per EPA"
- Water Quality
  - 0 discharge
  - Higher risk of contamination
  - Aqueous ammonia & propane
- Steep Slopes & Wetlands
  - Intent no impacts

Mitigation

- Condition - limit maximum emissions
- Condition - water quality monitoring & remediation
- Condition - mitigate unforeseen impacts

GEP/S Hybrid Energy Park

Impact

- Noise
  - Safety relief valves
  - Combustion turbines
- Tree Removal
  - Tree removal - hardwoods & VA Pine
- Loss of Habitat

Mitigation

- Condition
  - Maximum noise levels
  - Use silencers on relief valves
  - Noise study
  - Noise monitoring & remediation
- Concept Plan
  - Preserve 13.5 acres
  - Reforest 8.69 acres used for staging
- Proffer to measures to protect wood turtle

GEP/S Hybrid Energy Park
Visual Impacts

Combined Cycle Facility Example

Vapor Plume Examples

GEP/S Hybrid Energy Park Transportation Impacts

Realigned Cochran Mill Road

Gant Lane bridge, Sycolin Creek

- Proffer to improve Gant Lane with adjoining property owners or access easement to Sycolin Road

Hybrid Energy Park
Solar Array v. Open Space

- 68% open space & no solar array

  OR

- 52% open space & 14 acres of solar arrays (up to 4 MW power)

70% open space per policy

PC Briefing

- CPAM - is one needed?
- MR-HI - intended for Luck Stone's temporary quarrying use?
- PD-GI - was it considered?
- Chesapeake Bay - how would it apply?
- Lower Sycolin Community - fair share of historical narrative

Staff Findings & Recommendation

- Use may be reasonable given the natural gas lines, electrical transmission lines & proximity to quarry uses, as long as compatibility issues & impacts upon surrounding uses & environment are mitigated.

- Work Session